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Land Clearing

Description

Land clearing is the removal of all woody and herbaceous plant material from a site to develop the site for other uses. Land clearing is divided up into two components, grubbing--which is removing roots and stumps by digging--and tree removal.

In regulated wetlands, clearing trees and shrubs with heavy equipment is not allowed without a permit from the State. Trees and shrubs can be cut by hand without a permit, but stump removal requires a permit.

Other Terms Used To Describe

Grubbing
Tree Removal

Pollutants Controlled and Impacts

Due to the nature of the activity, land clearing will expose soil to erosive forces. BMPs which help prevent erosion should be used in conjunction with proper land cleaning practices to keep soil on-site. One essential BMP is the Buffer/Filter Strip, which includes the minimum width of natural vegetation that should be left in place to protect water bodies. This is important because vegetation provides shade for rivers and other water bodies. When land clearing is done immediately adjacent to a water body, shade is reduced, resulting in increased stream temperatures. For some fish species such as trout, even slight changes in stream temperatures can be lethal.

In some instances, land clearing removes over-age, high canopy forest cover and opens up new land to reforestation or other land uses. Proper land clearing practices may increase the amount of sunlight and allow for a greater diversity of plant and animal associations.

Application

Land Use
Applicable to all land uses.

Soil/Topography/Climate
Cleared sites on heavy soils and steep slopes are more subject to erosion and may require additional BMPs to keep the soil in place. See the Critical Area Stabilization BMP for information on how to protect steep slopes.

When to Apply
Land clearing activities should not begin until the site has been assessed and the trees which have been selected for cutting have been tagged. Except on highway projects, large-scale sites should be cleared in phases to allow second phase work to proceed in the initally cleared area while clearing

proceeds in other areas on-site. Land clearing during dry or frozen times will decrease compaction and potential water quality problems from runoff.

Where to Apply
This BMP applies to all construction sites.

Relationship With Other BMPs

BMPs that may be needed in conjunction with land clearing include:

Access Roads
Critical Area Stabilization
Slope/Shoreline Stabilization
Buffer/Filter Strip
Filters (Filter Fencing)
Staging and Scheduling

Specifications

Planning Considerations:

Forestry operations. The MDNR is currently developing BMPs for forestry operations. Upon their availability, any land clearing done as part of a forestry operation should be done following the guidance in the forestland BMP manual. As interim guidance: a plan should be developed which specifies the kinds and location of timber which will be salvaged, the location of haul roads and skid trails, the width of the natural buffer zone which remains around all water bodies, and the method (where applicable) proposed to cross any water bodies. The method of disposing of all material which will not be salvaged should also be specified. The plan should also include the BMPs which will be used to protect the cleared area from erosion.

When clearing land **for golf courses**, the golf course architect should take full advantage of opportunities to establish clearing edges so that natural tree specimens and vegetative edges create visually attractive golf holes. Selecting the final edge of the fairway should be dependent upon species size, age condition, design intent and visual impact. It is not uncommon to shift golf holes to preserve a single key tree.

Other non-forestry land clearing activities should be done so that valuable, healthy and aesthetically pleasing trees are kept in place. Leaving standing trees is also economically advantageous to the developer. Healthy trees should be identified and protected following specifications in the Tree Protection BMP. Where possible, preserve a natural Buffer/Filter Strip above and below the graded area and adjacent to all water bodies. Always try to avoid clearing to the water's edge.

1. Where it is necessary to develop to the water's edge, filter fencing should be used. See Filters BMP.

2. Stage the construction site so that only part of the site is being cleared at any given time. This will reduce the amount of time soil is exposed to erosive forces. Follow examples in the Staging and Scheduling BMP.

3. Diversions may be needed to intercept and divert runoff to Stabilized Outlets.

4. All debris should be kept out of surface water. If possible, leave some debris on the ground to decrease runoff and increase shade for seedlings. See the "Disposal Options" section, below.

5. Exposed soil should be temporarily seeded to prevent further erosion from the site. Follow specifications in the Spoil Piles and Seeding BMPs. Other BMPs may also be necessary to keep soil on the site.

Grubbing:
Grubbing is removing roots and stumps by digging. Grubbing is done to remove grasses, shrubs and small trees.

Grubbing should be carefully monitored near lakes and streams to protect the water's edge. Where possible, it is recommended that total clearing not take place to the water's edge. If it is necessary to clear to the edge, clear by hand cutting to preserve the bank.

Tree Removal:
1. The preferred method of tree removal is to cut the tree and remove the stump in a separate operation. This allows the tree to be used for commercial purposes such as lumber, firewood, or mulch. All stumps that need to be removed from a site should be removed at the same time to decrease the time soil is exposed.

2. The less preferred option is to remove the entire tree (including stump) in one operation.

3. The operation of heavy equipment too close to the tree may result in possible tree loss later because of soil disruption, compaction and trunk damage. It is recommended that, within reasonable limits, all heavy equipment operations be limited to outside the drip line of all trees to be preserved. (The drip line is the area from the trunk of the tree outward to a point at which there is no longer any overhanging vegetation).

4. In forested wetlands, shallow-rooted species are protected by each other from potential wind damage. Whenever trees are removed from a forested wetland, the possibility of blow downs or windthrow increases. Shallow rooted species are also protected by edge trees, which shield the prevailing wind side of the woodlot. It is helpful to leave as many edge trees as possible on the prevailing wind side of the cleared area.

Disposal Options:
Where possible, all stumps, roots, logs, brush, limbs, tops and other debris resulting from the clearing or thinning operation should be disposed of by reducing the material by processing through a chipping machine. The chips should be disposed of as mulch (see the Mulching BMP), as part of a landscaping plan (where applicable), outside the right-of-way, or in other approved areas. Organic material may also be composted. See the Organic Debris Disposal BMP for more information on organic debris disposal options.

Note that tree tops, stumps and field stone which are cleared and piled in suitable areas can improve habitat for wildlife such as rabbits, raccoons, snakes, salamanders, toads and frogs.

Maintenance

Land clearing itself requires no maintenance except maintenance of the equipment used in the land clearing operation. Tree Protection, which is an important part of land clearing, should be done throughout the clearing stages. It is also important to maintain all other temporary and permanent BMPS which are used in conjunction with the land clearing BMP to prevent soil erosion and sedimentation. This includes maintaining appropriate Buffer/Filter Strip widths.